

School, work, and dropping out

Deborah Sunter

Does working while attending high school increase the risk of dropping out? Family background, peer culture, school experience and academic performance may all play a strong role in determining school outcome. But there is concern among educators that student employment may also be associated with an increased likelihood of dropping out, before a certificate or diploma is earned. In 1976, 37% of high school students aged 17 to 19 were employed. By 1991, almost 50% of students were employed on average each month, and an even greater proportion - about two-thirds - worked at some time during the school year.

Student employment has not always been viewed as a potential limitation to academic success. During the 1970s, educators focused on the transition from school to work and the relevance of the school curriculum to the labour market. Part-time employment was perceived as a positive experience for students since it provided valuable job exposure and eased the transition between school and work. Students with jobs were also applauded for their demonstration of initiative and industrious behaviour ([Lawton](#), 1992).

Since the early 1980s, however, the need for a highly skilled labour force has focused the concerns of educators on the problem of student retention and formal skill development. Graduation from high school is now seen as a minimal educational requirement. Therefore, the possibility that student employment is associated with a greater risk of dropping out is a growing concern.

Part of the ambivalence about the relationship between work and school arises from contradictory research results. For example, one study reported that hours worked during the school year were an important indicator of dropping out, with the risk of non-completion increasing as hours of work increased ([Marsh](#), 1991). But an earlier study found that students with jobs of moderate intensity (less than 20 hours per week) were more likely to remain in school than those who were not employed ([D'Amico](#), 1984).

The 1991 School Leavers Survey explores the effects of work during the school year on the likelihood of

graduating among former Canadian high school students (see [The School Leavers Survey](#)).

Profile of a dropout

Of the 895,000 18 to 20 year-olds who were no longer attending high school in the spring of 1991, 79% had graduated with a certificate or diploma, while 21% were non-completers. (1) Non-completion was considerably more common among men, 24% of whom had dropped out compared with only 16% of women. The average age at leaving school was 17 for both non-completers and graduates. But, 39% of those who failed to complete high school were 16 years of age or less when they dropped out (Table 1).



Table 1 Selected characteristics of high school graduates and dropouts by sex, 1991*

Source: *School Leavers Survey*

* *Includes some 15,000 elementary school dropouts.*

Academic performance, school experience and school completion all appear to be closely related. Dropouts were more likely to have experienced difficulty with core subjects such as mathematics and English or French, (2) and were less likely to have had an A or B average in their final high school term. However, most dropouts appear to have performed well enough academically to have continued in school - the majority did not report difficulty with core subjects, and 86% had a C average or higher.

Non-completers were far more likely than graduates to have had negative school experiences such as a lack of enjoyment or interest, and they were less likely to have participated in class or in extracurricular activities. They were also five times more likely than graduates to have failed a grade in elementary school.

Parents and family situation also seem to have a noticeable impact on the probability of high school non-completion. A larger proportion of dropouts than graduates had mothers who had not completed high school. Also, more male dropouts than male graduates had fathers who were not high school graduates. Moreover, even though most graduates and dropouts lived with both parents during their final school year, the incidence of single-parent families was twice as high among non-completers.

Recent studies, in both the United States and Canada ([Radwanski](#), 1987), suggest that students whose family socio-economic status is low appear to be at greater risk of dropping out. Such students may get less encouragement to continue in school as their families have lower academic expectations; they may also be under pressure to help support the family.

Work and dropping out

The likelihood of high school non-completion also appears to be influenced by the number of hours a student is employed. Working moderate hours (1 to 19 hours per week) was associated with low dropout rates for both young men and women, lower, in fact, than the dropout rates of those without jobs. However, the effect of working many hours (20 or more hours per week) varied by sex. Among men, such intensive work involvement was associated with a greatly increased dropout rate. But the dropout rate for women who worked 20 or more hours per week was lower than the rate for those without a job ([Chart A](#)).



Chart A Among 18-20 year-olds, dropout rates in 1991 were lowest for those with moderate work involvement.

Source: School Leavers Survey

How does work affect the risk of dropping out?

Given the complex set of factors that interact to determine the likelihood of non-completion, questions arise about the effect of work on the risk of dropping out. For example, does the low risk of non-completion among students working moderate hours indicate that employment with reasonable time demands is conducive to staying in school? Or does this low risk result from a process of self-selection whereby more successful students tend to seek work with shorter work hours, while poorer students work long hours or not at all? On the other hand, is intensive work involvement merely an indicator of a process of dropping out that was set in motion by other factors such as family background, school experiences and early academic failure? Or is intensive involvement in work a risk factor on its own, especially among men?

The relationship between moderate work involvement and a low risk of non-completion was remarkably persistent for both sexes, regardless of which background or performance variable was taken into account ([Table 2](#)).



Table 2 Dropout rates of former high school students by work involvement, 1991*

Source: *School Leavers Survey*

* *Includes some 15,000 elementary school dropouts.*

The dropout rate was lowest among male and female students working moderate hours regardless of academic performance or school experience. This pattern suggests that there may be some special benefit associated with moderate work involvement, over and above the effects of any process of self-selection whereby more successful students tend to chose work with moderate time demands.

Among women, working long hours was generally associated with a lower or equal risk of dropping out than not working at all. Among men, the effect of long work hours on school outcome appears to be influenced by educational experiences and family background. For men who had an average of C or below, or did not enjoy school, or failed a grade in elementary school, or did not participate in extracurricular activities, or had a parent who did not graduate from high school, there was a similar or higher risk attached to not having a job than having a job with long work hours.

The impact of hours worked, "all else being equal"

In order to assess the independent impact of work involvement on school completion, a logistic regression, in which the values of all other relevant characteristics were held constant simultaneously, was run separately for men and women (see [Estimating the probability of dropping out](#)). This technique measures the probable impact of work on school completion, regardless of other characteristics, such as whether the student came from Ontario or elsewhere, did or did not fail a grade in elementary school, enjoyed or did not enjoy school, had or did not have a parent with a high school education, and so on.

The results of this analysis provide further confirmation that employment with moderate time demands tends to be associated with a reduced risk of dropping out, other factors being equal ([Chart B](#)). Moderate work hours were associated with a 60% lower risk of non-completion than was no employment among female students, and a 20% reduction of risk among male students. Work weeks of 20 hours or more were also associated with a 40% lower dropout risk for women. But the risk of dropping out was 60% higher for men with jobs that demanded long hours than among those who were not employed.



Chart B In 1991, students working less than 20 hours per week were least likely to drop out.

Source: School Leavers Survey

Note: This chart represents the probability of high school students with different levels of work involvement dropping out relative to that of students with no jobs (see Estimating the probability of dropping out)

Conclusion

The effect of work on school completion appears to be complex, and significantly different between men and women. Moderate work hours are associated with a reduced risk of dropping out for both sexes, even when other factors such as academic performance, absenteeism, school experience, parents' education, and province of education are taken into account.

Intensive work involvement appears to substantially increase the risk of dropping out among young men, while lack of employment is associated with the highest risk of dropping out among women.

These findings suggest that the combination of work and school should not, in itself, be cause for major concern. There appear to be aspects of work that reinforce perseverance and success in school. Limited involvement in work may serve to increase a student's self-esteem, and foster success-oriented behaviours such as punctuality, initiative, and hard work. In addition, most working students have low-skill, low-paying jobs that hold little promise for the future. Therefore, their work experiences may convince many that high school graduation is essential to gaining access to more interesting employment with greater earnings potential.

It appears, however, that intensive work involvement increases the risk of dropping out among young men. Long hours on the job may reinforce the drop-out process for this group by providing tangible and immediate rewards that outweigh the more abstract and long-term benefits of graduation. Such hours may also reflect a growing disinterest in, and detachment from, school.

The School Leavers Survey offers the first opportunity at the national level to examine the relationship between work and high school non-completion in the context of other related factors. However, a number of questions cannot be addressed by this survey's data. For example, why are there such striking differences in the effect of intensive work involvement on dropout rates between men and women? What is the mechanism through which moderate work hours are associated with a reduced risk of non-completion? And is the duration of employment (the number of weeks worked during the school year) as critical a variable as is the intensity of work (usual weekly hours on the job)? The long-term effects of dropping out are so important for both the individual and society, that further research in this area is warranted.

The School Leavers Survey

The School Leavers Survey was conducted between April and June 1991 by Statistics Canada on behalf of Employment and Immigration Canada. A sample of 9,460 persons aged 18 to 20 were contacted and asked whether they were attending high school, had graduated, or had left school before graduating. The survey design allowed for an over-sampling of the latter group, in order that their characteristics could be more fully described. Those continuing in high school (1,476) were excluded from the analysis presented in this article. Thus, the sample size based on dropouts and graduates was 7,984.

Although these young people were no longer attending high school, they may have been attending some other type of educational institution such as a trade school, community college or university at the time of the interview.

The dropout rates used in this article were based on self-reported status. They were calculated by dividing the number of youths aged 18 to 20 who as of April 1991 had left school without graduating (dropouts), by the total number of youths 18 to 20 no longer attending high school at that time (graduates plus dropouts). While these rates are useful for analytic purposes, they should not be confused with those generally used to estimate the incidence of high school non-completion (see [Trends in dropout rates](#)).

Trends in dropout rates

There are a number of methods used to calculate dropout rates, each with its own merit and problems. For example, the "apparent" dropout rate (or "cohort" dropout rate) is a commonly used measure, and is estimated by comparing the number of students in grade 9 to the number of high school graduates 3 and 4 years later. These data are available from school records that have been provided to Statistics Canada by the provincial governments for many years. They are, therefore, useful in the analysis of trends in dropout rates.

According to this cohort estimation method, the dropout rate declined substantially between the late 1970s and the early 1980s (see [Chart](#)). In 1985 the trend reversed, rising to about 34% in 1990 and then falling to 32% in 1991. (Data are not available for 1988 and 1989.)

These rates are considerably higher than those presented in this article. Part of the difference may be due to an overestimation of the apparent dropout rate because this method does not allow for students who take longer than three or four years to graduate (Grade 12, or Secondary V in Quebec).



Chart Cohort dropout rates have been fluctuating in recent years.*

Source: *Education, Culture and Tourism Division*

* *Data are not available for 1988 and 1989.*

Estimating the probability of dropping out

Clearly, dropping out is seldom the consequence of any one isolated factor. To explain the behaviour of one variable (the dependent variable), several other variables (known as explanatory variables) are used in an analytical model. However, in order to isolate the effect of one explanatory variable (for example, hours worked), it is necessary to "control for" the effects of the remaining variables. Controlling for a variable requires holding the value of that variable constant. In order to assess the impact of the explanatory variable (usual weekly hours worked) on the dependent variable (dropout rate), the data were statistically adjusted so that the differences in the estimated effects of each variable in the model (except usual weekly hours worked) were nullified. Similarly, the impact of each of the other explanatory variables was determined while controlling for the effects of all other explanatory variables.

Logistic regression analysis is used here in order to assess the impact of hours worked on the probability of dropping out, independent of the influences of other factors. The results of this statistical technique can be expressed in terms of the relative probability of dropping out. That is, this technique measures the likelihood that students in one category will drop out compared with that of students in the reference category (all other factors being equal). The reference category always takes on the value of 1. For example, men who worked 20 or more hours a week had a 1.6 to 1, or 60% greater, probability of dropping out than those without a job, while women who worked long hours had a 0.6 to 1, or a 40% lower, probability of dropping out than their non-working peers.

The validity of this technique depends on the inclusion of all important explanatory variables in the model. In practice, we are limited to the information available from the School Leavers Survey. In addition to selected demographic, background, school performance, and school experience variables, the province of study was included in the regression model in order to account for differences in provincial educational systems, and to act as a proxy for local labour market conditions. Because of the striking differences in dropout behaviour between men and women, logistic regressions were run separately by sex.



Table The relative probability of dropping out

Source: *School Leavers Survey*

Notes

Note 1

Graduates and dropouts together accounted for 77% of the 1,136,000 persons aged 18 to 20 years in Canada in April 1991. The remaining 241,000 (132,000 men and 109,000 women) were still in high school at the time of the survey; they were excluded from the analysis because their completion status was not yet known.

Note 2

Students who were educated in English were asked whether or not they had difficulty with English, and those educated in French were asked about difficulty with French.

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References

- D'Amico, R. "Does employment during high school impair academic progress?" *Sociology of education*, Vol. 57, Washington D.C., July 1984, pp.152-164.
- Lawton, S. *Part-time work and the high school student: costs, benefits and future*, Report prepared for the Innovations Program, Ottawa: Employment and Immigration Canada, March 1992.
- Marsh, H. "Employment during high school: character building or a subversion of academic goals?" *Sociology of education*, Vol. 64, Washington D.C., July 1991, pp.172-189.
- Radwanski, G. *Ontario study of the relevance of education and the issue of dropouts*, Toronto: Ontario Ministry of Education, 1987.
- Steinberg, L., E. Greenberger, L. Garduque and S. McAuliffe. "High school students in the labor force: some costs and benefits to schooling and learning." *Educational evaluation and policy*

analysis, Vol. 4, no. 3, Washington D.C., 1982, pp.363-372.

Author

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Source

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 HIGHLIGHTS

 TABLE OF CONTENTS

 SUBJECT INDEX

 AUTHOR INDEX

 FRANÇAIS

 HELP

 HOME



Table 1

Selected characteristics of high school graduates and dropouts by sex, 1991*

	Total		Men		Women	
	Graduates	Dropouts	Graduates	Dropouts	Graduates	Dropouts
All 18 to 20 year-olds not in high school ('000)	711	184	334	114	377	70
	%					
Academic performance**						
Difficulty with mathematics	39	48	34	43	43	56
Difficulty with English/French	17	37	23	43	12	26
Average in last school term:						
A	30	5	27	--	33	--
B	47	32	46	30	48	34
C	19	40	23	42	15	36
D/F	1	13	--	14	--	10
School experience						
Did not enjoy school	10	41	11	44	9	38
Not satisfied with variety of courses	19	25	18	26	19	25
Most courses were not useful	20	29	21	30	20	26
Participated less than most in class	10	23	10	23	9	23
Most classes were not interesting	21	41	25	46	18	33
Did not get along with most teachers	2	15	2	17	2	11
Did not participate in extracurricular activities	28	50	24	48	32	52
Did not "fit in" at school	5	14	6	14	4	14
Skipped classes during last year at school	59	75	62	78	56	70
Past school performance						
Failed a grade in elementary school	8	36	11	41	5	27
Living arrangements at time of leaving school						
Lived with both parents	83	61	85	65	82	56
Lived with one parent	12	25	12	25	13	24

Parents' education						
Mother did not graduate from						
high school	28	35	24	32	31	39
Father did not graduate from high school	28	29	25	30	30	27
Age at leaving high school						
16 years or less	10	39	9	37	12	41
17 years	43	27	41	26	44	30
18 years	36	25	36	27	35	21
19 or 20 years	12	9	14	10	9	8

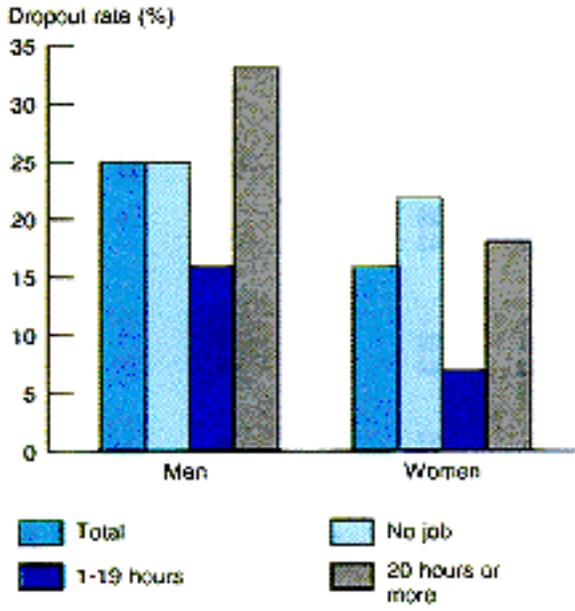
Source: School Leavers Survey

** Includes some 15,000 elementary school dropouts.*

*** Excludes elementary school dropouts.*

Chart A

Among 18-20 year-olds, dropout rates in 1991 were lowest for those with moderate work involvement.



Source: School Leavers Survey

Table 2

Dropout rates of former high school students by work involvement, 1991*

	Men				Women			
	Total	No job	1-19 hours	20 hours or more	Total	No job	1-19 hours	20 hours or more
	%							
Total	25	25	16	33	16	22	7	18
No difficulty with mathematics**	21	18	13	31	11	15	--	18
Difficulty with mathematics**	28	30	17	35	18	26	11	18
No difficulty with English/French**	19	16	10	28	12	16	6	16
Difficulty with English/French**	37	42	25	42	27	41	--	25
Average in last school term:**								
A	5	--	--	--	--	--	--	--
B	17	17	11	23	11	11	7	15
C/D/F	42	45	32	44	33	46	18	32
Did not skip classes during last year at school	16	17	--	23	11	18	--	--
Skipped classes during last year at school	30	30	20	36	19	26	8	22
Enjoyed school	17	16	10	25	11	16	6	13
Did not enjoy school	58	63	49	59	44	59	--	37
Did not fail a grade in elementary school	19	16	11	26	12	17	6	16
Failed a grade in elementary school	56	69	39	57	51	66	--	36
Average or greater participation in class	23	21	14	30	14	19	6	16
Less than average participation in class	44	47	29	51	32	47	--	31
Participated in extracurricular activities	19	15	10	29	11	15	6	15

Did not participate in extracurricular activities	41	44	32	42	23	34	10	23
Lived with both parents	21	21	13	28	11	15	6	14
Lived with one parent or no parents	43	43	30	49	31	43	--	30
Mother graduated from high school	19	15	13	25	10	15	--	--
Mother did not graduate from high school	28	30	--	30	20	30	--	21
Father graduated from high school	16	11	11	23	11	--	--	--
Father did not graduate from high school	19	--	--	--	13	--	--	--

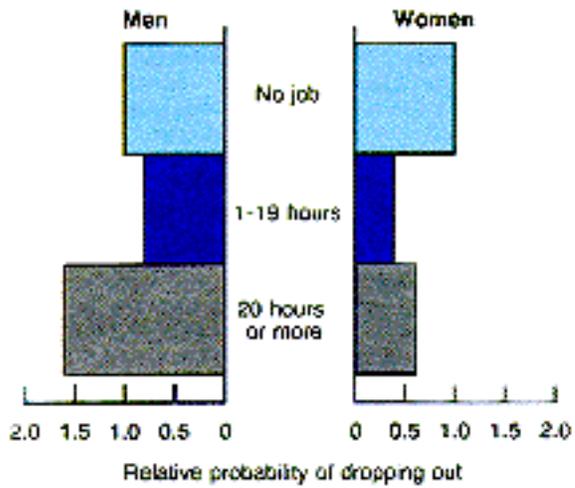
Source: School Leavers Survey

** Includes some 15,000 elementary school dropouts.*

*** Excludes elementary school dropouts.*

Chart B

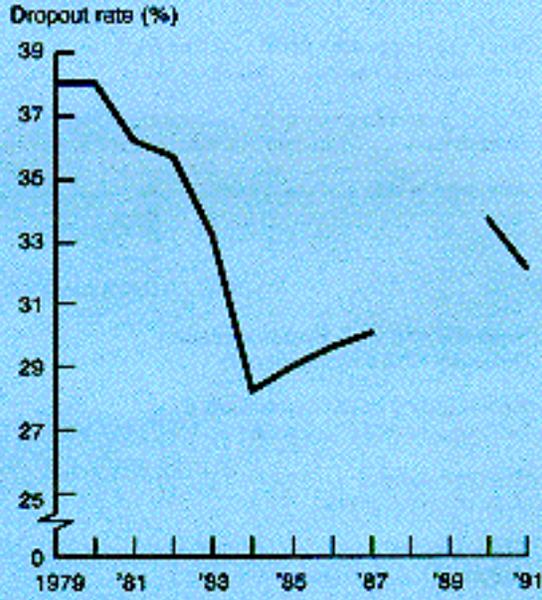
In 1991, students working less than 20 hours per week were least likely to drop out.



Source: School Leavers Survey

Note: This chart represents the probability of high school students with different levels of work involvement dropping out relative to that of students with no jobs (see Estimating the probability of dropping out).

Cohort dropout rates have been fluctuating in recent years.*



Source: Education, Culture and Tourism Division
* Data are not available for 1988 and 1989.

The relative probability of dropping out		
	Men	Women
Average or greater participation in class	1.0	1.0
Less than average participation in class	1.3	1.4
Participated in extracurricular activities	1.0	1.0
Did not participate in extracurricular activities	1.3	1.1
Average in last school term:		
A	1.0	1.0
B	1.7*	1.9*
C	4.3**	4.9**
D/F	18.4**	32.5**
Don't know/not stated	8.4**	4.1**
No difficulty with English/French	1.0	1.0
Difficulty with English/French	1.2	0.9
No difficulty with mathematics	1.0	1.0
Difficulty with mathematics	0.7*	0.8
Enjoyed school	1.0	1.0
Did not enjoy school	3.3**	3.4**
Did not fail a grade in elementary school	1.0	1.0
Failed a grade in elementary school	3.2**	5.0**
Father present in home and a high school graduate	1.0	1.0
Father present in home but not a high school graduate	1.3	1.3
Father present, education level unknown/not stated	2.0*	2.3
No father in home	3.1**	3.8**
Mother present in home and a high school graduate	1.0	1.0
Mother present in home but not a high school graduate	1.6*	2.2**
Mother present, education level unknown/not stated	2.1**	2.2*
No mother in home	1.5	2.1*
Got along with most teachers	1.0	1.0
Did not get along with most teachers	4.7**	1.9
Went to school in Ontario	1.0	1.0

Newfoundland	1.4	1.0
Prince Edward Island	1.1	1.2
Nova Scotia	1.6	0.9
New Brunswick	0.6	0.8
Quebec	1.5	1.3
Manitoba	0.8	1.0
Saskatchewan	0.9	0.6
Alberta	0.9	0.6
British Columbia	0.6	0.8
Age at school leaving:		
15 or more in Quebec, 16 or more in other provinces	1.0	1.0
Less than 15 in Quebec, less than 16 in other provinces	13.2**	13.9**
Did not work during school	1.0	1.0
Worked 1 to 19 hours per week	0.8	0.4**
Worked 20 or more hours per week	1.6**	0.6*
<i>Source: School Leavers Survey</i>		
* <i>Statistically significant at the 0.05 level.</i>		
** <i>Statistically significant at the 0.01 level.</i>		